WHAT IS CLAIMED IS:

1. A method for determining the presence of one or more analytes in a sample suspected of containing any of a plurality of said analytes, said method comprising:

(a) providing in combination in a medium (i) said sample, (ii) a binding partner for each of said analytes, (iii) for each of said analytes, a first reagent comprising a member of a signal producing system, a ligand and an analyte analog, (iv) a second reagent comprising a binding partner for said ligand, wherein the binding, to said ligand, of said binding partner for said ligand alters the signal produced by said member of a signal producing system if one or more of said analytes are present in said sample, and

(b) measuring said signal, the amount thereof being related to the presence of one or more of said analytes in said sample.

2. A method according to Claim 1 wherein said method is a homogeneous method and said medium is examined for the amount of said signal.

3. A method according to Claim 1 wherein said method is a heterogeneous method and bound second reagent is separated from said medium and examined for the amount of said signal.

4. A method for determining the presence of one or more analytes in a sample suspected of containing any of a plurality of said analytes, said method comprising:

(a) providing in combination in a medium (i) said sample, (ii) a binding partner for each of said analytes, (iii) for each of said analytes, a first reagent comprising a member of a signal producing system, a ligand and an analyte analog, (iv) a second reagent comprising a binding partner for said ligand, wherein the binding of said second reagent to said ligand alters the amount of signal produced by said member of a signal producing system such that an

increased amount of signal is produced if one or more of said analytes are present in said sample, and

(b) determining the amount of said increased amount of said signal, the amount thereof being related to the presence of one or more of said analytes in said sample.

5. A method according to Claim 4 wherein said method is a homogeneous method and said medium is examined for the increased amount of said signal.

6. A method according to Claim 4 wherein said method is a heterogeneous method and bound second reagent is separated from said medium and examined for the increased amount of said signal.

7. A method for determining the presence of one or more analytes in a sample suspected of containing any of a plurality of said analytes, said method comprising:

(a) combining in a medium said sample and a binding partner for each of said analytes,

(b) adding to said combination, for each of said analytes, a first reagent comprising a member of a signal producing system, a ligand and an analyte analog,

(c) adding to said combination a second reagent comprising a binding partner for said ligand, wherein the binding of said second reagent to said ligands alters the amount of signal produced by said member of a signal producing system if one or more of said analytes are present in said sample,

(d) examining said medium for the amount of said signal, the amount thereof being related to the presence of one or more of said analytes in said sample.

8. A method according to Claim 7 wherein said binding partner for each of said analytes is a protein.

9. A method according to Claim 8 wherein said protein is an antigen or an antibody.

10. A method according to Claim 7 wherein said ligand is a hapten.

11. A method according to Claim 10 wherein said ligand is a small molecule selected from the group consisting of drugs, biotin and dyes.

12. A method according to Claim 7 wherein said first reagent is bound to a matrix.

13. A method according to Claim 7 wherein said second reagent is bound to a matrix.

14. A method according to Claim 7 wherein said analyte is a drug.

15. A method according to Claim 7 wherein said binding partner for said ligand is a protein.

16. A method according to Claim 15 wherein said protein is an antigen or an antibody.

17. A method according to Claim 7 wherein said member of a signal producing system is a label.

18. A method according to Claim 17 wherein said label is selected from the group consisting of enzymes, dyes, fluorescent molecules, chemiluminescers, coenzymes and enzyme substrates.

19. A method for simultaneously determining the presence of one or more drugs in a sample suspected of containing any of a plurality of said drugs, said method comprising:

(a) combining in a medium said sample and an antibody for each of said drugs,

(b) adding to said combination, for each of said drugs, a first reagent comprising a first label, a small molecule and a drug analog,

(c) adding to said combination a second reagent comprising a second label and an antibody for said small molecule, wherein said first label and said second label interact in close proximity to produce a predetermined increased amount of signal if one or more of said drugs are present in said sample,

(d) examining said medium for the amount of said signal, an increased amount thereof being related to the presence of one or more of said drugs in said sample.

20. A method according to Claim 19 wherein said small molecule is selected from the group consisting of drugs, biotin and dyes.

21. A method according to Claim 19 wherein said first reagent is bound to a particle.

22. A method according to Claim 19 wherein said second reagent is bound to a particle.

23. A method according to Claim 19 wherein said first and second labels are selected from the group consisting of a luminescent energy donor and acceptor pair, a singlet oxygen generator and chemiluminescent reactant pair, and an enzyme pair wherein a product of the first enzyme serves as a substrate for the second enzyme.

24. A method according to Claim 19 wherein one of said first label or said second label is an enzyme and the other of said labels is an enzyme that is different from the first enzyme and a product of the reaction of the enzyme comprising the first label is a substrate for the other of said enzymes.

25. A method according to Claim 19 wherein one of said first label or said second label is a chemiluminescent compound and the other of said labels is a sensitizer.

26. A method according to Claim 19 wherein one of said first label or said second label is an energy donor or acceptor and the other of said labels is a fluorescent compound.

27. A kit for determining the presence of one or more drugs in a sample suspected of containing any of a plurality of said drugs, said kit comprising in packaged combination:

(a) an antibody for each of said drugs,

(b) for each of said drugs, a first reagent comprising a first label, a small molecule and a drug analog, and

(c) a second reagent comprising a second label and an antibody for said small molecule, wherein said first label and said second label are capable of interacting in close proximity to modulate a signal if one or more of said plurality of drugs are present in said sample.

28. A kit according to Claim 27 wherein said small molecule is selected from the group consisting of drugs, biotin and dyes.

29. A kit according to Claim 27 wherein said first reagent is bound to a particle.

30. A kit according to Claim 27 wherein said second reagent is bound to a particle.

31. A kit according to Claim 27 wherein said first and second labels are selected from the group consisting of a luminescent energy donor and acceptor pair, a singlet oxygen generator and chemiluminescent reactant pair,

and an enzyme pair wherein a product of the first enzyme serves as a substrate for the second enzyme.

32. A kit according to Claim 27 wherein one of said first label or said second label is an enzyme and the other of said labels is an enzyme that is different from the first enzyme and the product of the reaction of the enzyme comprising the first label is a substrate for the other of said enzymes.

33. A kit according to Claim 27 wherein one of said first label or said second label is a chemiluminescent compound and the other of said labels is a sensitizer.

34. A kit according to Claim 27 wherein one of said first label or said second label is an energy donor or acceptor and the other of said labels is a fluorescent compound.